

**PATENT APPLICATION**  
**Attorney Docket No. 1111 008 301 0202**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE**  
**BOARD OF PATENT APPEALS AND INTERFERENCES**

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William A. Burris and Philip M. Prinsen - Appellants

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Inventor:	<b>William A. Burris et al.</b>	Conf. No.:	<b>6883</b>
Application No.:	<b>10/074,992</b>	Group Art Unit:	<b>1744</b>
Filed:	<b>February 13, 2002</b>	Examiner:	<b>K. M. Jastrzab</b>
Title:	<b>OPERATORY WATER DISINFECTION SYSTEM</b>		

**REPLY BRIEF FOR APPELLANTS**

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**1. STATUS OF CLAIMS:**

The status of the claims remains as set forth in the previously-filed Appeal Brief of December 4, 2006.

Claims 1 – 5 and 7 - 31 remain rejected in the application. The rejections of claims 1 – 5 and 7 - 31 are appealed herein.

**2. GROUND OF REJECTION TO BE REVIEWED ON APPEAL:**

The grounds for rejection remain as set forth in the previously-filed Appeal Brief, no new grounds for rejection have been set forth in the Examiner's Answer.

Claims 1 - 5 and 7 - 31 remain rejected under 35 USC §103(a) as being unpatentable over Contreras U.S. Patent 5,824,243 (hereinafter "Contreras") in view of Burris U.S. Patent 5,207,993 (hereinafter "Burris '993").

Claims 1 - 5 and 7 - 31 also remain rejected under 35 USC §103(a) as being unpatentable over Engelhard et al. U.S. Patent 5,942,125 (hereinafter "Engelhard") in view of Burris '993.

3. **ARGUMENT:**

Further to Appellants arguments submitted in the previously-filed Appeal Brief, the following arguments are submitted in response to the Examiner's Response to Argument (Section 10) of the Examiner's Answer dated February 23, 2007. References to 1<sup>st</sup> and 2<sup>nd</sup> Questions are intended to represent the questions presented in the previously-filed Appeal Brief and have been abbreviated here.

**Rejection Under 35 U.S.C. §103**

1<sup>st</sup> Question (*whether claims 1 - 5 and 7 – 31 were properly rejected under 35 USC §103(a) as being unpatentable over Contreras in view of Burris*)

The Examiner correctly notes that Appellants previously argued that Contreras and Burris '993 were not properly combinable. One reason was that Burris '993 is directed to a batch system for disinfection of a liquid. In response the Examiner again opines that Contreras teaches a batch system, and that the disclosure of col. 2, lines 8-13 (periodic or continuous ozonation that maintains a high level of ozone in its active state throughout storage) is somehow a teaching of a batch process. Appellants respectfully maintain that such a position ignores Contreras' teaching of immediate replenishment of any water used (col. 2, lines 53-55), or in the alternative, that the Examiner has misconstrued the meaning of the term "batch" (e.g., "2. A quantity required for or produced as the result of one operation:... *mixed a batch of cement*," see *American Heritage® Dictionary of the English Language*, Fourth Edition, Copyright © 2006 by Houghton Mifflin Company).

Appellants continue to submit that the rejection under 35 USC §103(a) must be overturned because Contreras and Burris '993 are not properly combined so as to establish *prima facie* obviousness. More specifically, the two patents teach away from one another and fail to support the combination/modification urged as the basis for the rejection.

In the Examiner's Answer, in response to Appellants' urging that Contreras teaches away from Burris '993 use of venting, the Examiner now alleges that Contreras' use of "quick-disconnect" components suggests "service requirements of the system." Next the Examiner "creates" a new basis for combination by suggesting, without

support, that “the presence of the venting and reducing means of Burris [‘993] in the system of Contreras would ensure that the system is instantly serviceable and that users are protected from the potential release of any excess ozone without a waiting period ...” The Examiner then concludes (Examiner’s Answer; p. 6, middle), again without further support, that the presence of unions 13 and 18 for disconnecting pump/motor 10, “leaves an obvious need to handle the ozone off-gas of Contreras differently at system shutdown...” (underlining added for emphasis) - presumably this is in contrast to normal operation of the Contreras system that is described (col. 3, line 57 – col. 4, line 21), where the disclosed reuse of excess ozone remains contrary to the requirement of a reducing system before venting as recited in claim 1.

Appellants also note that Contreras discloses a closed system that appears to preclude the inclusion of a vent of any kind. For example, Contreras teaches “a unique and particularly advantageous feature of the water ozonating system is that the ozonated water is kept entirely within a closed system (col. 2, line 1) ... Furthermore, the system, by ozonating water in a closed, single storage tank (col. 2, line 15)...” Absent specific support for the Examiner’s newly created basis for the combination/modification, Appellants respectfully urge that it remains unclear what the Examiner relies upon for teaching such a suggestion. Moreover, Contreras contemplated the dispensing of actively ozonated water, and did not express concern for a release that is now urged by the Examiner as the basis for the combination/modification. One of ordinary skill in the art could not have been motivated to make the alleged combination in view of the contrary teachings of Contreras and Burris ‘993, or the lack of any suggestion as to any advantage of a reducing system being added to Contreras.

Appellants continue to contend that Contreras teaches away from the recited limitations of independent claim 1 as well, which require “a separation system that separates undissolved gas from the ozonated liquid prior to circulating the ozonated liquid through the circulation passageway; a reducing system that prevents ozone in the separated gas from escaping into the atmosphere by passing the gas through an ozone reducing material before venting” (underlining added). Beginning at the bottom of page 6 in the Examiner’s Answer, it is alleged that “Contreras does teach separation means as seen in the figure, line 26 is provided at the top of tank 12 to separate the undissolved off-gas in the headspace from the ozonated liquid.” Notably, “flexible tube 26” is described at col. 4, lines 5-19, as being positioned to

capture and reuse excess ozone. As tube 26 merely transports already separated ozone, there does not appear to be any suggestion of a separation system where undissolved gas is separated from the ozonated liquid prior to circulation. In fact, Contreras teaches the circulation of actively ozonated water as disclosed col. 4 lines 5 – 8. Thus, Appellants continue to contend that the rejection fails to set forth all the limitations recited in claim 1. Accordingly the rejection should be overturned as being unsupported, as well as a misstatement of the law with respect to obviousness (e.g., “obvious need to handle”; Examiner’s Answer, p. 6).

With specific reference to *Claims 12 and 13*, the Examiner’s Answer again indicates that the rejection of these claims is based upon the insertion of the Burris ‘993 reduction catalyst into tubing 26 of Contreras. In response to Appellants suggesting that the Examiner failed to address the inherent problem with inserting the ozone reducer of Burris ‘993 in the line 26, which is used to inject excess ozone back into the liquid as taught by Contreras, and asking why one would be motivated to make such a change if it defeats the use of line 26, the Examiner responds that Contreras would still function. The Examiner further urges that if the overall function and activity is not destroyed the substitution is proper and that the motivation (an alleged but unsupported “enhanced safety aspect”) is supplied.

In reply, Appellants submit that pursuant to MPEP §2143.01, the Examiner has failed to demonstrate where the prior art provides the suggestion or motivation to modify Contreras as proposed by the Examiner. Moreover, “[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)” *cited in* MPEP §2143.01(VI). As the proposed modification changes the principle of operation of Contreras, by eliminating the supply of excess ozone to the venturi from tube 26, it is insufficient to render claims 12 and 13 obvious and the Board is, once again, respectfully urged to overturn the rejection.

Relative to *claim 19*, and *claim 20* dependent therefrom, the claims further recite an ozone sensor connected to an alarm. In the Examiner’s Answer, the Examiner clarifies that the rejection is based upon Burris ‘993, col. 4, lines 23-33. Yet Appellants cannot find any reference therein to an ozone sensor present in a

circulation passageway (Burris '993 being a batch treatment system as previously noted). Accordingly, Appellants respectfully maintain that the rejection of claim 19 over Contreras in view of Burris '993 remains incomplete and reversal of the rejection of claims 19 and 20 is respectfully requested.

Considering *claim 23*, again Appellants respectfully maintain that the rejection fails to set forth any indication as to where a teaching of the use of operatory unit dried air as the source of oxygen for the ozone generator is found in either of the patents relied upon for the rejection. Appellants know that Burris '993 suggests the use of a dryer, but urge that such a teaching does not give rise to the specific limitations set forth in claim 23. The Examiner now urges Contreras reference to "dental operatory procedures" in the Abstract as a use for the ozonated water somehow gives rise to a teaching of the use of operatory unit dried air as the source of oxygen. There is simply no such teaching in Contreras, and claim 23 is therefore patentably distinguishable over the arguable combination.

Relative to *claim 24*, the Examiner's remarks starting at the bottom of page 7 suggest that they are addressing the limitations of claim 24 as well, but Appellants find no further discussion relative to the rejection, and respectfully maintain that the Examiner has not identified a teaching of valves that protect a desiccant from moist air when the device is not being operated. Absent such a teaching or suggestion *prima facie* obviousness has not been established, and 24 is urged to be patentably distinguishable over the arguable combination. The Board is respectfully requested to reverse the rejection of claims 23 and 24.

2<sup>nd</sup> Question (whether claims 1 - 5 and 7 - 31 were properly rejected under 35 USC §103(a) as being unpatentable over Engelhard in view of Burris)

Relative to the rejection based upon the alleged combination of Engelhard et al. and Burris '993, Appellants urged that the rejection improperly relies on teachings from Contreras for the suggestion that a UV ozone generator may be substituted for a corona generator. The Advisory Action sets forth the Examiner's reliance on Contreras to suggest the modification of Engelhard (i.e., as the basis to urge the substitution of Engelhard's UV Generator with a generator disclosed by Burris '993). Appellants challenged the Examiner's conclusion, and in response, the Examiner has again urged (Examiner's Answer; p. 8) that Contreras merely taught functional

equivalence. In conclusion the Examiner acknowledged Appellants' proof of the variations between the various ozone generators, but then maintained "that such variations do not discount the fact that both UV and corona discharge generators form disinfecting concentrations of ozone and that the substitution is proper." (p. 8, middle paragraph). Appellants' respectfully challenge this conclusion and continue to maintain that in spite of the fact that both types of generators might be used to produce ozone (at levels that differ by a factor of ten), it would not have been obvious to one of ordinary skill in the art to make the proposed substitution as to do so would impact the performance of the device and would require an entirely redesigned system.

One skilled in the art would not have been motivated to substitute the UV generator taught by Engelhard with the corona discharge generator of Burris '993 because the change in concentrations of ozone produced would require significant alterations to the designs of such systems. Such alterations would preclude one of skill in the art from considering the substitution alleged by the Examiner as the basis for the rejection.

Absent a specific teaching to suggest the proposed substitution, Appellants respectfully urge that the present claims are again being used as the "recipe" from which elements of unrelated systems are urged for combination and modification. Accordingly, Appellants respectfully request that the Board overturn the rejection as failing to establish *prima facie* obviousness.

Considering, *in arguendo*, the combination of Engelhard in view of Burris '993, Appellants maintain that the arguable combination still fails to teach a circulation system that circulates liquid containing dissolved ozone and a separation system that separates undissolved gas from the ozonated liquid prior to circulating the ozonated liquid through the circulation passageway. Engelhard and Burris '993, alone or in combination, both fail to indicate the claimed features. Accordingly, claim 1 is respectfully submitted to be patentably distinguishable over the arguable combination and the Board is requested to reverse the rejection.

Appellants further submit that the rejections set forth in the Office Action are again incomplete relative to the dependent claims. Even though Appellants' Brief noted that the rejection ignores the limitations of the other dependent claims (e.g., claims

27-29) the limitations of the dependent claims have not been addressed in the Examiner's Answer. Accordingly, Appellants urge that *prima facie* obviousness has not been established relative to the limitations of all the dependent claims, including those separately set forth and argued in the previously-submitted Brief.

### Conclusion

As set forth above, claims 1 - 5 and 7 - 31 remain improperly rejected under 35 USC §103(a) as being unpatentable over Contreras in view of Burris '993. In particular, the rejection under 35 USC §103(a) improperly combined patents that teach away from one another. In the alternative, when considered, *in arguendo*, the rejection under 35 USC §103(a) combining Contreras in view of Burris '993 omitted claim elements recited in the rejected claims.

Second, claims 1 - 5 and 7 - 31 were also improperly rejected under 35 USC §103(a) as being unpatentable over Engelhard in view of Burris '993, and even if considered *in arguendo*, the combination fails to teach specific limitations set forth in the claims – both the independent as well as dependent claims. Thus, the dependent claims, as separately argued herein, are also patentably distinguishable over the arguable combinations. Appellants respectfully request that the Board consider the dependent claims separately on their merits.

In light of the various arguments set forth above, Appellants respectfully submit that all of the questions presented in Appellants Brief on Appeal should be answered in the negative, that all rejections set forth should be reversed or overturned, and that Appellants' pending claims should be indicated as allowable.

Respectfully submitted,

/Duane C. Basch, Esq. Reg. No. 34,545/

Duane C. Basch

Attorney for Appellants

Registration No. 34,545

Basch & Nickerson LLP

1777 Penfield Road

Penfield, New York 14526

DCB/dcb